

Foldable Compactly Stowable Extremely High Power Solar Array System, Phase I

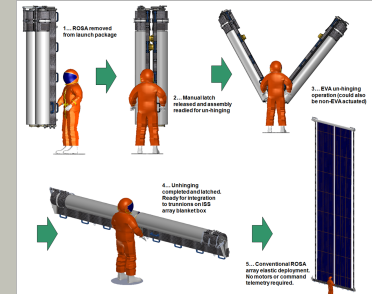
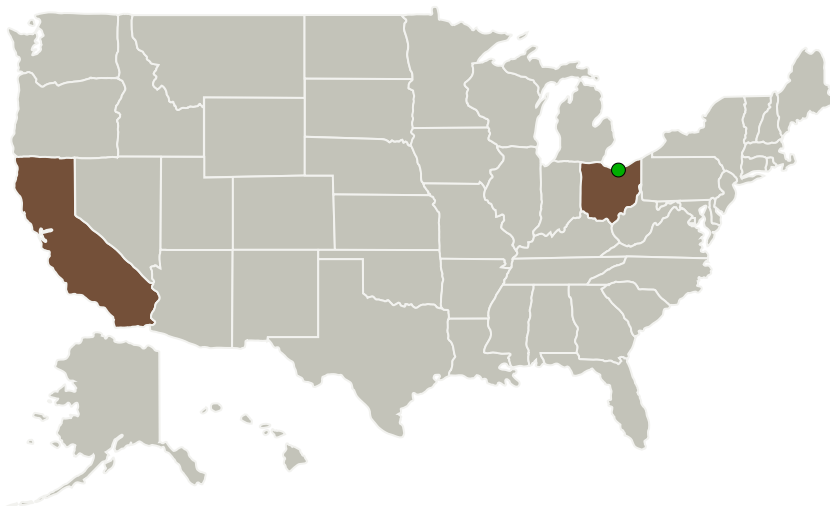
Completed Technology Project (2016 - 2016)



Project Introduction

Deployable Space Systems, Inc. (DSS) has developed a high performance solar array system that has game-changing performance metrics in terms of ultra-compact stowage volume and extremely high specific power. The embodiment is a tensioned membrane blanket solar array that stows very compactly by folding, where it's total stowed height is only half the width of the deployed array, alleviating any stowed height restrictions and allowing for the packaging of enormous solar arrays within standard launch vehicle fairings. This innovation of extremely compact stowed packaging allows for much higher power to be packaged into a given stowed envelope, enabling significantly higher powered NASA/Non-NASA missions, and particularly enabling missions where stowed volumes are significantly constrained. The technology is also well suited for very large (extremely high power) SEP and non-SEP solar array systems where stowed packaging the greatest amount of power within a given envelope is demanded. The proposed solar array technology innovation is reliable and leverages proven heritage components, materials, and approaches to provide very low risk implementation for the end-user. The proposed technology will produce revolutionary array-system-level performance in terms of ultra-compact stowage volume, high specific power, lightweight, reliability, modularity, adaptability, and affordability. The proposed technology also has many rapid commercial infusion paths to help maximize NASA's ROI.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Deployable Space Systems, Inc(DSS)	Lead Organization	Industry	Goleta, California
● Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio

Primary U.S. Work Locations	
California	Ohio

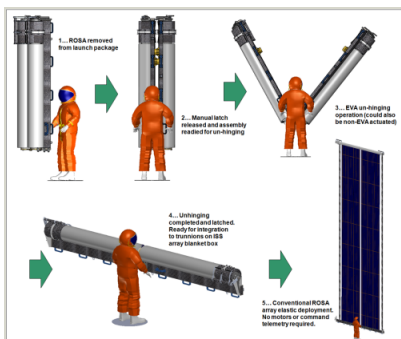
Project Transitions

**June 2016:** Project Start**December 2016:** Closed out

Closeout Documentation:

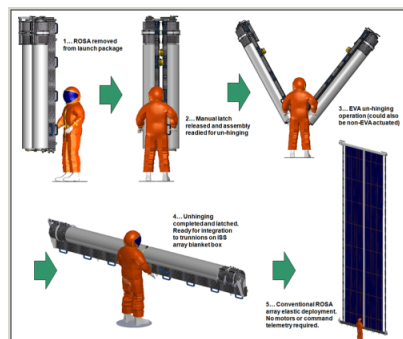
- Final Summary Chart(<https://techport.nasa.gov/file/139751>)

Images



Briefing Chart Image

Foldable Compactly Stowable Extremely High Power Solar Array System, Phase I
(<https://techport.nasa.gov/image/134510>)



Final Summary Chart Image

Foldable Compactly Stowable Extremely High Power Solar Array System, Phase I Project Image
(<https://techport.nasa.gov/image/132954>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Deployable Space Systems, Inc (DSS)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

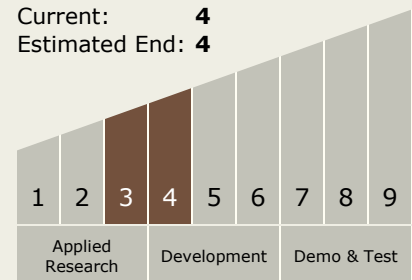
Brian R Spence

Technology Maturity (TRL)

Start: **3**

Current: **4**

Estimated End: **4**



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Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
 - └ TX03.1 Power Generation and Energy Conversion
 - └ TX03.1.1 Photovoltaic

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System